

**Notice of Allowability**

Application No.

10/626,526

Examiner

Stephen W. Smoot

Applicant(s)

HASE, ICHIRO

Art Unit

2813

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment filed on 24 January 2005.
2. ☒ The allowed claim(s) is/are 2-4, 6 and 7.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☒ including changes required by the attached Examiner's ~~Amendment~~ Comment ~~or in the Office action of~~  
~~Paper No./Mail Date \_\_\_\_\_.~~
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's ~~Amendment~~ Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Stephen W. Smoot*  
Patent Examiner/AU 2813

### **EXAMINER'S COMMENT**

This Office action is in response to applicant's amendment filed on 24 January 2005.

#### ***Drawings***

1. Replacement drawings were received on 24 January 2005. These drawings are not acceptable because Figs. 7-8 are not designated as --Prior Art--. It is noted that applicant's "Remarks" filed on 24 January 2005 (see page 6, last full paragraph) indicate that the applicant did intend to make this change.

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant (see applicant's "Remarks" filed on 24 January 2005, page 6, last full paragraph): Figs. 7-8 need to be designated as --Prior Art--. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

***Specification***

3. The substitute specification filed on 24 January 2005 is in compliance with 37 CFR 1.125 and has been entered.

***Allowable Subject Matter***

4. Claims 2-4, 6-7 are allowed.
5. The following is an examiner's statement of reasons for allowance:
- Claims 2-4 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device with an emitter layer, a base layer, and a collector layer, wherein the base layer contains GaAsBi (claim 2), GaAsBiN (claim 3), or InPBi (claim 4);
  - Claim 6 is allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device with an emitter layer, a base layer that contains bismuth, and a collector layer, wherein the emitter layer includes at least one selected from the group consisting of GaAs, AlGaAs, InGaP, and InP; and
  - Claim 7 is allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device with an

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emitter layer, a base layer that contains bismuth, and a collector layer, wherein the collector layer includes at least one selected from the group consisting of GaAs, InGaAs, and InP.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS